Dynamic Chiropractic

MUSCULOSKELETAL PAIN

# Hyperpronation: Treating Secondary Conditions

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Patients seldom present with the complaint of hyperpronation or excessive pronation. It is usually left to the doctor to realize that the reported problem is due to pronation. Unfortunately, too many times the patient undergoes unnecessary or excessive examinations and treatment procedures when the underlying problem is a hyperpronated foot (or feet).

What follows are common patient complaints that are frequently caused by (secondary to) excessive pronation, and which indicate the need for custom-fitted foot orthotics. Patients with an obvious need should be fitted with orthotics early in their chiropractic care. This will produce a good response to spinal and extremity adjustments, and will prevent frustration in both doctor and patient.

In the History

Back problems are worse with standing, walking, running. When a patient reports a history of upright locomotor activities and spinal symptoms, a close evaluation of the feet will often identify excessive and/or asymmetrical pronation. A brief gait evaluation should look for abnormalities such as foot flare or poor toe-off. This clearly calls for orthotics to minimize the stress being transmitted from the lower extremities to the spine.

Recurrent ankle sprains. A history of previous sprain injuries to one or both ankles indicates biomechanical instability and probable permanent ligament damage. The important ligaments that support the arches of the foot are often injured during an ankle sprain, and arch collapse and/or unilateral hyperpronation can result. Orthotics will provide the proprioceptive stimulus and mechanical advantage needed to prevent re-injury.

Family history of foot problems or surgery. Since we inherit many health tendencies, a patient who has family members with foot problems and/or surgery has a much higher probability of the same. Excessive calcaneal mobility, *hallux valgus,* plantar fascitis, and poor arch development are all associated with hyperpronation and appear to have a familial tendency. Fitting for orthotics may prevent these problems from developing, and could help the patient avoid surgery.

Strenuous athletic activities. Those who regularly engage in weightbearing sports need both shock absorption and foot/ankle stability. Patients who present with athletic injuries associated with their sport activities often demonstrate excessive pronation as a complicating and inhibiting factor.[1] Orthotic support can increase performance and prevent injuries in a long list of individual and team sports - such as running, tennis, skiing, skating, soccer, baseball, football, and basketball.

History of lower extremity stress fractures, tendinitis, shin splints, hamstring strains. Whenever an athlete, recreational or competitive, reports symptoms of overuse injury (microtrauma) in the lower extremities, excessive pronation must be considered. These conditions have been closely correlated with biomechanical asymmetries (such as hyperpronation) and require better support and shock absorption.[2]

Chronic knee pain, patellofemoral arthralgia, ACL injury. The knee joint is a sensitive indicator of abnormal biomechanical stress, and many knee problems have been found to indicate the need for orthotics. Controlling pronation decreases the rotational forces, which improves patellar tracking and protects the anterior cruciate ligament.[3]

During the Exam

Postural imbalances (pelvic tilt, scoliosis, forward head). When a standing structural evaluation discloses a pelvic tilt (whether forward, backward, or low on one side), a lower extremity asymmetry due to unilateral or bilateral hyperpronation is likely. Both functional and idiopathic types of spinal curvatures can be associated with pronation, and will benefit from the foot stabilization and neurological stimulus provided by orthotics. Many postural complexes (forward head is one of the most common) are secondary to excessive pronation, with poor standing balance and proprioception from the feet.

Gait asymmetry, calcaneal eversion, foot flare. Watching a patient walk, and looking for indicators of biomechanical asymmetry, will often demonstrate the need for orthotics. Whenever there is excessive pronation, the foot and ankle complex does not function correctly during the stance phase of gait, and this stress is transmitted to the pelvis and spine with every step.

Foot calluses, bunions, *hallux valgus*. A careful examination of foot problems will often show evidence of hyperpronation and arch collapse. Heavy callusing, bunion development, and abnormal alignment all indicate the need for improved biomechanics and orthotics.*4*

Lack of an arch (especially unilateral). This is easily seen during the weightbearing portion of the exam, when a foot collapses under the weight of the body. An even better method is the navicular drop test, which measures the change in height of the medial longitudinal arch at the navicular prominence from sitting to standing.[5] A foot without an arch will pronate excessively, and needs orthotic support.[6]

Knee instability, high Q-angle, poor patellar tracking. When the knee does not align properly or track correctly, degenerative wear-and-tear and chronic symptoms will follow. Orthotic alignment is required to reduce the abnormal pronation forces on this complex joint, which must be able to sustain frequent high forces during walking and running.[7]

On the X-Rays

Scoliosis (functional or idiopathic), widespread disc degeneration. The spine responds to poor support from one of the lower extremities by developing a lateral curvature. Some studies indicate that gait disturbances (during the stance phase, in particular) may be one of the causative factors for idiopathic scoliosis.[8] Significant intervertebral disc degeneration is made worse when the foot pronates, and transmits heel strike shock upwards into the spine. In this case, orthotics with viscoelastic properties will often reduce chronic symptoms dramatically.

Unlevel sacral base, sacroiliac joint degeneration. The pelvis shows evidence of inadequate support by the appearance of a tilted sacral base when standing. This is often due to a functional short leg secondary to hyperpronation, which requires orthotic support.[9] Sacroiliac degeneration may be due to chronic SI joint dysfunction, which may be secondary to hyperpronation.

Low femur head, coxafemoral degenerative joint disease. These conditions are due to either an

anatomical or a functional short leg, which are often associated with asymmetrical and/or excessive pronation. Degenerative changes in the hip joint have been correlated with the stress of a longer leg. Both will benefit from the improved balance and support provided by orthotics.

Heel spurs, DJD in knees, metatarsals. X-rays of the feet and knees may reveal evidence of long-standing regional stress, such as degenerative changes in weightbearing joints, and connective tissue calcification. Calcium deposited in the calcaneal attachment of the plantar fascia specifically indicates the need for support of the arches of the foot.

Response to Care

Recurrent subluxations, symptom flare-ups. Making the same adjustment to a patient's spine again and again suggests poor structural support for the region. Excessive pronation is often the underlying lack of proper support. Orthotics have been used for decades by chiropractors who don't want to continue adjusting the same area, and want to see the adjustment "hold" better.

Conclusion

Chiropractic care is based on the concept of the treating the cause, and not just decreasing the symptoms. Our goal is to achieve long-term health, and not just short-term relief of pain. As can be seen by the above list, excessive foot pronation can be the source of many of our patients presenting symptoms. In fact, the feet are seldom painful in most of the conditions that are clear indicators of the need for orthotics. All doctors of chiropractic must be alert for signs of lower-extremity involvement in spinal conditions and musculoskeletal problems.

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